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Post-COVID Conditions: Information for Healthcare Providers

Updated Dec. 16, 2022

This page provides an overview for healthcare providers. For information of CDC research, see Science behind Long COVID.

For the General Public: Long COVID (Post-COVID Conditions)

Key Points

- The term “Post-COVID Conditions” is an umbrella term for the wide range of physical and mental health consequences experienced by some patients that are present four or more weeks after SARS-CoV-2 infection, including by patients who had initial mild or asymptomatic acute infection.
- Based on current information, many Post-COVID Conditions can be managed by primary care providers, using patient-centered approaches to optimize the quality of life and function of affected patients.
- Objective laboratory or imaging findings should not be used as the only measure or assessment of a patient’s well-being; normal laboratory or imaging findings do not invalidate the existence, severity, or importance of a patient’s Post-COVID symptoms or Conditions.
- Healthcare providers and patients are encouraged to set achievable goals through shared decision-making, and to approach treatment by focusing on specific symptoms (e.g., headache) or conditions (e.g., dysautonomia). A comprehensive management plan focusing on improving physical, mental, and social well-being may be helpful for some patients.
- Understanding of Post-COVID Conditions remains incomplete. The approach to caring for patients with Post-COVID Conditions will likely change over time as evidence accumulates.

Tools and Resources

- COVID.gov
- Medical Professional Organization Expert Opinion and Consensus Statements
- Support Groups
- Symptom and Condition Assessments

  Long COVID, Other Fatiguing Illnesses, and Disability

- Educational Programs for Healthcare Providers
- Other Tools and Resources

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Overview

Definition

> CDC uses the term “Post-COVID Conditions” (PCC) as an umbrella term for the wide range of health consequences that can be present four or more weeks after infection with SARS-CoV-2, the virus that causes COVID-19.

Post-COVID Conditions are associated with a spectrum of physical, social, and psychological consequences, as well as functional limitations that can present substantial challenges to patient wellness and quality of life.

Post-COVID Conditions are referred to by a wide range of names, including:

- Long COVID
- Post-acute COVID-19
- Long-term effects of COVID
- Post-acute COVID syndrome
- Chronic COVID
- Long-haul COVID
- Late sequelae
- Post-acute sequelae of SARS-COV-2 infection (PASC)

Although standardized case definitions are still being developed, in the broadest sense, Post-COVID Conditions can be considered a lack of return to a usual state of health following acute COVID-19 illness. Post-COVID Conditions might also include development of new or recurrent symptoms or unmasking of a pre-existing condition that occurs after the symptoms of acute COVID-19 illness have resolved.

Time frame

> Most patients appear to recover from acute COVID-19 illness within four weeks. However, some continue to have on-going symptoms or new or recurrent symptoms and conditions after this acute phase.

CDC considers Post-COVID Conditions to be present if recovery does not occur after the 4-week acute phase even though many patients continue to recover between 4 and 12 weeks.

- While patients may still recover after 12 weeks, persistent illness becomes more likely.
- CDC uses the 4-week timeframe in describing Post-COVID Conditions to emphasize the importance of initial clinical evaluation and supportive care during the initial 4 to 12 weeks after acute COVID-19.

Presentation

Different onset patterns for Post-COVID Conditions have been identified that further exemplify their heterogeneity, including:

- persistent symptoms and conditions that begin at the time of acute COVID-19 illness
- new-onset signs, symptoms, or conditions following asymptomatic disease or a period of acute symptom relief or remission
- an evolution of symptoms and conditions that include some persistent symptoms (e.g., shortness of breath) with the addition of new symptoms or conditions over time (e.g., cognitive difficulties)

- worsening of pre-existing symptoms or conditions

Factors that may further complicate the presentation of Post-COVID Conditions include:

- pre-COVID comorbidities (underlying medical conditions)
- physical deconditioning at baseline or after a prolonged acute disease course that can be nonspecific to COVID-19
- physical and mental health consequences of illness with a long or complicated disease course, including depression and anxiety
- social, environmental, and economic stressors caused by the COVID-19 pandemic

Some presentations may share similarities with other post-infectious syndromes, such as myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS), postural orthostatic tachycardia syndrome (POTS) and other forms of dysautonomia, or mast cell activation syndrome (MCAS). Some of these types of conditions were also reported in patients following severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), two other life-threatening illnesses resulting from coronavirus infections.

New or ongoing symptoms

A wide range of other new or ongoing symptoms and clinical findings can occur in people with varying degrees of illness from acute SARS-CoV-2 infection, including patients who have had mild or asymptomatic SARS-CoV-2 infection. These effects can overlap with multiorgan complications, or with effects of treatment or hospitalization. This category is heterogeneous, as it can include patients who have clinically important but poorly understood symptoms (e.g., difficulty thinking or concentrating, post-exertional malaise) that can be persistent or intermittent after initial acute infection with SARS-CoV-2. Commonly reported symptoms include:

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- Dyspnea or increased respiratory effort
- Fatigue
- Post-exertional malaise* and/or poor endurance
- Cognitive impairment or "brain fog"
- Cough
- Chest pain
- Headache
- Palpitations and tachycardia
- Arthralgia
- Myalgia
- Paresthesia
- Abdominal pain
- Diarrhea
- Insomnia and other sleep difficulties
- Fever
- Lightheadedness
- Impaired daily function and mobility
- Pain
- Rash (e.g., urticaria)
- Mood changes
- Anosmia or dysgeusia
- Menstrual cycle irregularities
- Erectile dysfunction

* Post-exertional malaise (PEM) is the worsening of symptoms following even minor physical or mental exertion, with symptoms typically worsening 12 to 48 hours after activity and lasting for days or even weeks.

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Prevalence

The prevalence of Post-COVID Conditions has been challenging to estimate, with estimates ranging widely (5–30%). Reasons for these wide-ranging estimates include:

- differing symptoms or conditions investigated
- the temporal criteria used (three weeks up to many months following SARS-CoV-2 infection)
- the study settings included (outpatient vs. inpatient)
- how symptoms and conditions are assessed (e.g., self-report vs. electronic health record database)

CDC posts data on Post-COVID Conditions and provides analyses, the most recent of which can be found on the U.S. Census Bureau's Household Pulse Survey.

Possible causes

It can be difficult to distinguish symptoms caused by Post-COVID Conditions from symptoms that occur for other reasons. Alternative reasons for health problems need to be considered, such as other diagnoses, unmasking of pre-existing health conditions, or even SARS-CoV-2 reinfection.

It is also possible that some patients with Post-COVID Conditions will not have had positive test results for SARS-CoV-2 because of a lack of testing or inaccurate testing during the acute period, or because of waning antibody levels or false-negative antibody testing during follow up.

Post-COVID Conditions are heterogeneous and may be attributable to different underlying pathophysiologic processes. Researchers are working to characterize and differentiate the multiple possible etiologies, such as

- organ damage resulting from acute phase infection
- complications from a dysregulated inflammatory state
- ongoing viral activity associated with an intra-host viral reservoir
- autoimmunity
- inadequate antibody response
- other potential causes

Multiorgan system effects of COVID-19

> Multiorgan system effects of SARS-CoV-2 infection have been documented in most, if not all, body systems, including cardiovascular, pulmonary, renal, dermatologic, neurologic, gastrointestinal, endocrine, and psychiatric.

Autoimmune conditions can also occur after COVID-19. A wide variety of health effects can persist after the acute COVID-19 illness has resolved (e.g., pulmonary fibrosis, myocarditis). Patients who experienced multisystem inflammatory syndrome (MIS) during or after COVID-19 illness may be at higher risk for on-going multiorgan system effects and Post-COVID Conditions. It is unknown how long multiorgan system effects might last and whether the effects could lead to chronic health conditions.

Effects of COVID-19 illness or hospitalization

> Effects of COVID-19 illness or hospitalization can include tracheal stenosis from prolonged intubation, severe weakness, and muscle atrophy.

Some of these effects are similar to those from hospitalization for other respiratory infections or other conditions.

- This category can also encompass post-intensive care syndrome (PICS), which includes a range of health effects that remain after a critical illness.
- These effects can include severe weakness and post-traumatic stress disorder (PTSD) .

Though the effects of hospitalization may not be unique to COVID-19 illness, they are considered Post-COVID Conditions if they occur after a SARS-CoV-2 infection and persist for four or more weeks.

Assessment and Testing for Post-COVID Conditions

> Many Post-COVID Conditions can be diagnosed clinically based on history and findings on physical examination. Others might require directed diagnostic testing with the understanding that such clinical assessments might be uninformative, and that potential harms could arise from excessive testing such as:
>
> - the increased risk for incidental findings,
> - anxiety about abnormal results that do not have clinical significance,
> - imaging-related radiation exposure,
> - cost, and
> - time spent for medical appointments.

For most patients with possible Post-COVID Conditions, healthcare professionals might choose a conservative diagnostic approach in the first four to 12 weeks following SARS-CoV-2 infection. Laboratory and imaging studies can often be normal or nondiagnostic in patients experiencing Post-COVID Conditions and symptoms may improve or resolve during the first few

months after acute infection in some patients, further supporting an initial conservative approach to diagnostic testing. However, workup and testing should not be delayed when there are signs and symptoms of urgent and potentially life-threatening clinical conditions (e.g., pulmonary embolism, myocardial infarction, pericarditis with effusion, stroke, renal failure). Symptoms that persist beyond three months should prompt further evaluation.

Physical examination and vital signs

> Post-COVID Conditions involve multiple organ systems, thus a thorough physical examination should be completed.

For patients who report previous infection with SARS-CoV-2, in addition to standard vital signs (i.e., blood pressure, heart rate, respiratory rate, pulse-oximetry, body temperature) and body mass index, healthcare professionals should evaluate ambulatory pulse-oximetry for individuals presenting with respiratory symptoms, fatigue, or malaise. Orthostatic vital signs should be evaluated for individuals reporting postural symptoms, dizziness, fatigue, cognitive impairment, or malaise.

Laboratory testing

> At this time, no laboratory test can definitively distinguish Post-COVID Conditions from other conditions with different etiologies, in part due to the heterogeneity of Post-COVID Conditions.

A positive SARS-CoV-2 viral test (i.e., nucleic acid amplification test (NAAT) or antigen test) or serologic (antibody) test can help assess for current or previous infection; however, these laboratory tests are not required to establish a diagnosis of Post-COVID Conditions. SARS-CoV-2 RT-PCR and antigen testing are not 100% sensitive. Further, testing capacity was limited early in the pandemic so some infected and recovered persons had no opportunity to obtain laboratory confirmation of SARS-CoV-2 infection. Finally, some patients who develop Post-COVID Conditions were asymptomatic with their acute infection and would not have had a reason to be tested.

> For information about antibody testing, see Using Antibody Tests for COVID-19. Healthcare professionals should also consider the possibility of SARS-CoV-2 reinfection, especially in persons with new or worsening Post-COVID Conditions, see Guidance for SARS-CoV-2 Reinfection.

Before ordering laboratory testing for Post-COVID Conditions, the goals of testing should be clear to the healthcare professional and to the patient. Laboratory testing should be guided by the patient history, physical examination, and clinical findings.

- A basic panel of laboratory tests might be considered for patients with ongoing symptoms (including testing for non-COVID-19-related conditions that may be contributing to illness) to assess for conditions that may respond to treatment (Table 1a).
- More specialized testing may not be needed in patients who are being initially evaluated for Post-COVID Conditions; however, expanded testing should be considered if symptoms persist for 12 weeks or longer (Table 1b).

The absence of laboratory-confirmed abnormalities or the decision to forgo extensive laboratory testing should not lead to dismissing the possible impact of a patient's symptoms on their daily function. Where clinically indicated, symptom management and a comprehensive rehabilitation plan can be initiated simultaneously with laboratory testing for most patients.

> Specialized diagnostic tests should be ordered in the context of suggestive findings on history and physical examination (e.g., testing for rheumatological conditions in patients experiencing arthralgias).

Table 1a. Basic diagnostic laboratory testing to consider for patients with Post-COVID Conditions

Category
Blood count, electrolytes, and renal function

Laboratory Tests
Complete blood count with possible iron studies to follow, basic metabolic panel, urinalysis

Category
Liver function

Laboratory Tests
Liver function tests or complete metabolic panel

Category
Inflammatory markers

Laboratory Tests
C-reactive protein, erythrocyte sedimentation rate, ferritin

Category
Thyroid function

Laboratory Tests
TSH and free T4

Category
Vitamin deficiencies

Laboratory Tests
Vitamin D, vitamin B12

Table 1b. Specialized diagnostic laboratory testing to consider for patients with Post-COVID Conditions

Category
Rheumatological conditions

Laboratory Tests
Antinuclear antibody, rheumatoid factor, anti-cyclic citrullinated peptide, anti-cardiolipin, and creatine phosphokinase

Category
Coagulation disorders

Laboratory Tests
D-dimer, fibrinogen

Category
Myocardial injury

Laboratory Tests
Troponin

Category
Differentiate symptoms of cardiac versus pulmonary origin

Laboratory Tests
B-type natriuretic peptide

Other assessment and testing tools

Symptom inventories and assessment tools, such as those embedded within electronic health records at many healthcare organizations, can help evaluate and monitor the status of Post-COVID Conditions. Functional testing can also be helpful to quantitatively document clinical status over time.

A selection of some available assessment tools is shown in Table 2a and Table 2b. These and other measures can also be found in the health measures toolbox and American Academy of Physical Medicine & Rehabilitation's functional assessments, along with assessment tools for other rehabilitation needs (e.g., bowel and bladder function, pain, activities of daily living, cognition, mobility, sleep).

Testing should be tailored to the patient's symptoms and presentation.

Table 2a. Selected assessment tools for evaluating people with Post-COVID Conditions

Category
Functional status or quality of life

Tools
- Patient-Reported Outcomes Measurement Information System (PROMIS) (e.g., Cognitive Function 4a)
- Post-Covid-19 Functional Status Scale (PCFS)

- EuroQol-5D (EQ-5D)

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Category
Respiratory conditions

Tools
- Modified Medical Research Council (mMRC) Dyspnea Scale

Category
Neurologic conditions

Tools
- Montreal Cognitive Assessment (MoCA)
- Mini Mental Status Examination (MMSE)
- Compass 31 (for dysautonomia)
- Neurobehavioral Symptom Inventory

Category
Psychiatric conditions

Tools
- Generalized Anxiety Disorder-7 (GAD-7)
- Patient Health Questionnaire-9 (PHQ-9)
- PTSD Symptom Scale (PSS)
- Screen for Posttraumatic Stress Symptoms (SPTSS)
- PTSD Checklist for DSM-5 (PCL-5)
- Impact of Event Scale-Revised (IESR)
- Hospital Anxiety and Depression Scale (HADS)

Category
Other conditions

Tools
- Wood Mental Fatigue Inventory (WMFI)
- Fatigue Severity Scale
- Insomnia Severity Index (ISI)
- Connective Tissue Disease Screening Questionnaire

Table 2b. Selected functional and other testing tools for evaluating people with Post-COVID Conditions

Category
Exercise capacity

Tools
- 1-minute sit-to-stand test
- 2-minute step test
- 10 Meter Walk Test (10MWT)
- 6-minute walk test

Category
Balance and fall risk

Tools
- BERG Balance Scale
- Tinetti Gait and Balance Assessment Tool

Category
Other

Tools
- Tilt-table testing (e.g., for POTS)
- Orthostatic HR assessment

Healthcare professionals should use caution when conducting exercise capacity testing with some patients, especially those with post-exertional malaise (i.e., the worsening of symptoms following even minor physical or mental exertion, with symptoms typically worsening 12 to 48 hours after activity and lasting for days or even weeks).

- For these patients, and others who may not have the stamina for extended or lengthy assessments, modifications in the testing plan may also be needed.
- Exercise capacity tests should be scheduled for a dedicated follow-up appointment so that patients can prepare additional home supports.
- Ensuring that the testing circumstances best support the patient to perform maximally and then documenting this performance can create an objective reliable record of functional status that may be needed for assessment for other services or disability.

Additional diagnostic testing should be guided by findings from the patient history and physical examination and results of previous diagnostic testing, and may include a chest x-ray, pulmonary function tests, electrocardiogram, or echocardiogram for persistent or new respiratory or cardiac concerns, although additional studies and more clinical evidence is needed to support the utility of specific imaging tests for evaluation of Post-COVID Conditions.

For patients who may require imaging based on clinical findings, symptom management and a rehabilitation plan can often be initiated simultaneously with the imaging workup. In patients with normal chest x-rays and normal oxygen saturation, computed tomography (CT) imaging of the chest might have lower yield for assessing pulmonary disease. In patients without an elevated D-dimer and compatible symptoms, CT pulmonary angiogram may be lower yield in the context of a pulmonary embolism workup. In patients with brain fog symptoms, magnetic resonance imaging (MRI) of the brain might not be revealing for pathologic findings in the absence of focal neurological deficits. Further caution may be exercised in ordering imaging in children without a high index of suspicion of pathology. More specialized (e.g., cardiac MRI) imaging studies might merit consultation with specialists.

Management of Post-COVID Conditions

Medical management

For most patients, the goal of medical management of Post-COVID Conditions is to optimize function and quality of life. Ideally, healthcare professionals, in consultation with the relevant specialists, should develop a comprehensive management plan based on their patients' presenting symptoms, underlying medical and psychiatric conditions, personal and social situations, and their treatment goals.

- Setting achievable goals through shared decision-making can be beneficial.
- Transparency is important for the process of goal setting; healthcare professionals should advise patients that Post-COVID Conditions are not yet well understood and assure them that support will continue to be provided as new information emerges.
- Healthcare professionals and patients should continue to discuss progress and challenges and reassess goals as needed.
- Symptoms not explained by, or out of proportion to, objective findings are not uncommon after COVID-19 and should not be dismissed, even if there is not yet a full understanding of their etiology or their expected duration.

Effective Post-COVID care might include:

1. Providing holistic patient-centered management approaches to improve patient quality of life and function and partnering with patients to identify achievable health goals.
2. Facilitating standardized, trauma-informed approaches to assessing symptoms and conditions.
3. Setting expectations with patients and their families that outcomes from Post-COVID Conditions differ among patients. Some patients may experience symptom improvement within the first three months, whereas others may continue to experience prolonged or worsening of symptoms.
4. Continuing follow-up over the course of illness, with considerations of broadening the testing and management approach over time if symptoms do not improve or resolve, while remaining transparent that there is much more to learn about Post-COVID Conditions.
5. Establishing partnerships with specialists for physical and mental health care, when needed, which may include comprehensive rehabilitation services.
6. Connecting patients to social services when available, including assistance for other hardships (e.g., financial, family illness, bereavement, caregiving) and resources on disability and reasonable accommodations for work or school, and connections to patient support groups.

Symptom management approaches

Many Post-COVID Conditions can be improved through already established symptom management approaches (e.g., breathing exercises to improve symptoms of dyspnea). Creating a comprehensive rehabilitation plan may be helpful for some patients, and might include physical and occupational therapy, speech and language therapy, or vocational therapy, as well as

neurologic rehabilitation for cognitive symptoms. A conservative physical rehabilitation plan might be indicated for some patients (e.g., persons with post-exertional malaise) and consultation with physiatry for cautious initiation of exercise and recommendations about pacing may be useful. Gradual return to activity as tolerated could be helpful for most patients.

Optimizing management of underlying medical conditions might include counseling on lifestyle components such as nutrition, sleep, and stress reduction (e.g., meditation). COVID-19 vaccination should be offered to all eligible people, regardless of their history of SARS-CoV-2 infection.

Patient diaries and calendars might be useful to document changes in health conditions and symptom severity—especially in relation to potential triggers such as exertion (physical and cognitive), foods, menstruation, and treatments or medications. Such diaries and calendars can provide greater insight into patients' symptoms and lived experience for healthcare providers. Healthcare providers should encourage patients to report any new or changing symptoms and to discuss any changes in activities or routines.

Patients with Post-COVID Conditions may share some of the symptoms that occur in patients who experience:

- myalgic encephalomyelitis/chronic fatigue syndrome,
- fibromyalgia,
- post-treatment Lyme disease syndrome,
- dysautonomia , and
- mast cell activation syndrome .

Symptom management approaches that have been helpful for these disorders may also benefit some patients with Post-COVID Conditions (e.g., activity management (pacing) for post-exertional malaise).

Medications

FDA-approved or over-the-counter medications, as well as vitamin or electrolyte supplements, may be helpful for indicated illnesses (e.g., headache, anxiety) or documented deficiencies (e.g., vitamin deficiency) after carefully weighing the benefits and risks of pharmaceutical interventions. Some treatments have been offered that lack evidence of efficacy or effectiveness and could be harmful to patients. Healthcare providers should inquire about any unprescribed medications, herbal remedies, supplements, or other treatments that patients may be taking for their Post-COVID Conditions and evaluate for drug interactions.

> Follow-up visits with a healthcare professional might be considered every 2–3 months, with frequency adjusted up or down depending on the patient's condition and illness progression. Continuity of care is important in the management of Post-COVID Conditions.

Holistic support for patients with Post-COVID Conditions

> Evidence indicates that holistic support for the patient throughout their illness course can be beneficial.

Recognizing and validating the impact of illness on quality of life should be part of the ongoing healthcare professional and patient interaction. Healthcare professionals can provide information on peer support resources (e.g., patient support groups, online forums). Support groups are connecting individuals, providing support, and sharing resources for persons affected by COVID-19 (see Resources). When material, employment, or other social support needs are identified, healthcare professionals should consider referral themselves (if they are knowledgeable and able) and engaging a social worker, case worker, community health worker, or similarly trained professional to assist.

Patient groups with special considerations

> People who belong to racial and ethnic minority populations have experienced a higher burden of COVID-19—in part because of structural racism and longstanding disparities in social determinants of health—which has led to a higher

incidence of Post-COVID Conditions in some of these same populations.

- At the same time, people in these groups might have less access to the primary healthcare and treatment options that are needed by people suffering from Post-COVID Conditions.
- Furthermore, since people from racial and ethnic minority groups are disproportionately affected by some chronic conditions that have characterized Post-COVID Conditions, new or worsening symptoms from these conditions might not be recognized as Post-COVID Conditions, leading to underestimation of Post-COVID Conditions prevalence in these populations.
- Tools for cross-cultural communication and language access, including translated materials on Post-COVID Conditions and interpreter services, could help address health literacy and improve communication effectiveness.
- Deploying resources to these communities can help ensure disproportionately affected residents are aware of Post-COVID Conditions and have access to needed services.

People with disabilities

People with disabilities may require close follow-up related to functional limitations. Many adults with disabilities already experience challenges in accessing health services, and they may need different clinical management of their symptoms after SARS-CoV-2 infection, especially if their long-term symptoms are difficult to distinguish from their underlying chronic conditions.

People experiencing homelessness and people in correctional facilities

People experiencing homelessness or housing instability as well as people in correctional facilities may also experience challenges accessing healthcare and other support services. People with pre-existing substance use disorder may be at risk for relapse.

People with barriers to accessing health care

People with barriers to accessing health care due to lack of health insurance, access to healthcare professionals who accept their health insurance, or lack of transportation, childcare, or paid sick leave may face additional challenges accessing healthcare. Telehealth visits may be helpful for such patients with access to broadband.

Lastly, patient advocacy groups have raised concerns that some Post-COVID Conditions have been either misdiagnosed as or misattributed to psychiatric causes or deconditioning, particularly among persons who belong to groups that have been marginalized or disproportionately impacted. Sensitivity to and awareness of stigma, completing a full clinical evaluation, and maintaining an attitude of empathy and understanding can help address these concerns.

Documentation of Post-COVID Conditions

Documentation of SARS-CoV-2 infection and Post-COVID Conditions is critical for accurate public health surveillance. The World Health Organization (WHO) provided an ICD-10 code for Post-COVID Condition that was incorporated into the International Classification of Diseases, Tenth Edition Clinical Modification (ICD-10-CM) as of October 1, 2021:

- **U09.9 Post COVID-19 Condition, unspecified**– to allow the establishment of a link with COVID-19; not to be used in cases that still are presenting with acute COVID-19.

The code should be used for patients with a history of probable or confirmed SARS CoV-2 infection who are identified with a Post-COVID Condition. In addition, assign codes for specific conditions and symptoms identified. ICD-10-CM coding guidance can be found at 2022 ICD-10-CM Guidelines [583 KB, 115 pages], pages 30-31 (Section I.C.1.g.1.m).

Research on Post-COVID Conditions

> Medical and research communities are still learning about Post-acute COVID-19 symptoms and clinical findings. Scientific knowledge is still limited, including what causes symptoms and how often they occur.

Researchers are actively studying the prevalence, mechanism, duration, and severity of symptoms following acute SARS-CoV-2 infection, as well as risk factors associated with Post-COVID Conditions. Whereas older patients and those with underlying health conditions might have an increased risk for severe disease, young people, including those who were physically fit before SARS-CoV-2 infection, have also reported symptoms lasting several months after acute illness. Current U.S. government Long COVID research and plans for accelerating research and innovation in Long COVID are summarized in the National Research Action Plan on Long COVID.

Clinics for Post-COVID Conditions have been established at medical centers across the United States, bringing together multidisciplinary teams to provide a comprehensive and coordinated treatment approach to COVID-19 aftercare. Survivor support groups are connecting people, providing support, and sharing resources with survivors and others affected by COVID-19. Multi-year studies will be crucial in understanding Post-COVID Conditions.

CDC continues to actively investigate the full spectrum of COVID-19 illness, from the acute phase to long-term effects and conditions. This work will help to establish a more complete understanding of the natural history of SARS-CoV-2 infection and COVID-19 related illnesses, which can inform healthcare strategies, clinical decision-making, and the public health response to this virus.

How to Get Involved in Long COVID Research

The National Institutes of Health (NIH) is conducting a research project, called the RECOVER Initiative, to understand how people recover from a COVID-19 infection and why some people do not fully recover and develop Long COVID or Post-COVID Conditions.

Researching COVID to Enhance Recovery

Tools and Resources

COVID.gov

- U.S. Government Resources
- Services and Supports for Longer-Term Impacts of COVID-19
- National Research Action Plan

Medical Professional Organization Expert Opinion and Consensus Statements

- Multidisciplinary Quality Improvement Initiative
- 2022 ACC Expert Consensus Decision Pathway on Cardiovascular Sequelae of COVID-19 in Adults: Myocarditis and Other Myocardial Involvement, Post-Acute Sequelae of SARS-CoV-2 Infection, and Return to Play
- Post-COVID-19 Conditions in Children and Adolescents

Long COVID: A Primer for Family Physicians

European Respiratory Society Statement on Long COVID-19 Follow-Up

COVID-19 rapid guideline: managing the long-term effects of COVID-19

Support Groups

Body Politic

Survivor Corps

Long COVID Alliance

Long COVID Kids

Symptom and Condition Assessments

Measuring Orthostatic Blood Pressure

Health Measures Toolbox

AAPM&R Functional Assessments

Long COVID, Other Fatiguing Illnesses, and Disability

Guidance on “Long COVID” as a Disability Under the ADA, Section

Supporting Employers with Long COVID: A Guide for Employers

What You Should Know About COVID-19 and the ADA, the Rehabilitation Act, and Other EEO Laws

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome

Disability and ME/CFS

Providing Medical Evidence for Individuals with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)

PolicyNet/Instructions Updates/EM-21032 REV : Evaluating Cases with Coronavirus Disease 2019 (COVID-19)

Educational Programs for Healthcare Providers

ECHO Program

ECHO Program on Long COVID Treatments and Fatiguing Illness Recovery

Clinician Outreach and Communication Activity (COCA)

Webinar Thursday, May 5, 2022 – Evaluating and Supporting Patients Presenting with Cognitive Symptoms Following COVID

Webinar September 30, 2021 – Evaluating and Supporting Patients Presenting With Fatigue Following COVID-19

Webinar June 17, 2021 – Evaluating and Caring for Patients with Post-COVID Conditions

Other Tools and Resources

Find COVID-19 guidance for your community

Services and Supports for Longer-Term Impacts of COVID-19

The Accountable Health Communities Health-Related Social Needs Screening Tool

Tools for providing trauma-informed care

Tools for cross-cultural communication

AAPM&R Long COVID (PASC) resources

AAFP Social Determinants of Health resources

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Last Updated Dec. 16, 2022